

Estimation of Physical Properties of Elements

1. The density of aluminum is 2.70 g/cm^3 and that of indium is 7.31 g/cm^3 . Using these two values estimate the density of gallium.

2. The melting points of copper and gold are 1084°C and 1337°C , respectively. Estimate the melting point of silver.

3. a. The atomic radii of Rubidium is 235 pm and that of sodium is 190 pm . Estimate the radius of a potassium atom.

b. The actual radius of the potassium atom is 220 pm what is percent error in your calculation?
(Remember you did this in the lab)

4. The table below lists the melting points of the alkaline-earth metals. Make a graph (there is a grid on the back of this sheet) of melting point versus period number and then use a line of best fit to estimate the melting point of radium.

Element	Melting Point ($^\circ\text{C}$)	Period Number
Be	1287	
Mg	650	
Ca	842	
Sr	777	
Ba	727	
Ra	???	

The actual melting point of radium is 700°C . What is the percent error in your estimation?

Melting Point vs. Period Number

